

AMENDMENT TO THE CLAIMS

Please amend the claims as follows:

1-48. (Canceled)

49. (Withdrawn) A method of manufacturing a semiconductor device comprising the steps of:

forming a semiconductor film on an insulating surface of a substrate;

disposing a catalyst containing material in contact with at least one rectangular selected region of the semiconductor film, said catalyst being capable of promoting crystallization of said semiconductor film;

crystallizing said semiconductor film by heating;

patterning said semiconductor film into an active layer of at least one thin film transistor, said active layer including at least a portion of said selected portion;

forming a gate electrode adjacent to said active layer with a gate insulating film interposed therebetween; and

forming a wiring over said gate electrode and said active layer, said wiring being in contact with said selected portion of said semiconductor film.

50. (Withdrawn) A method according to claim 49 wherein said catalyst is selected from the group consisting of Ni, Fe, Co, Pd and Pt.

51. (Withdrawn) A method according to claim 49 wherein said rectangular selected region is parallel with said gate electrode.

52. (Withdrawn) A method of manufacturing a semiconductor device comprising the steps of:

forming a semiconductor film on an insulating surface of a substrate;

disposing a catalyst containing material in contact with at least one rectangular selected region of the semiconductor film, said catalyst being capable of promoting crystallization of said semiconductor film;

crystallizing said semiconductor film by heating;

patterning said semiconductor film into an active layer of thin film transistors, said active layer including at least a portion of said selected portion;

forming gate electrodes adjacent to said active layer with a gate insulating film interposed therebetween; and

forming a wiring over said gate electrodes and said active layer, said wiring being in contact with said selected portion of said semiconductor film.

53. (Withdrawn) A method according to claim 52 wherein said catalyst is selected from the group consisting of Ni, Fe, Co, Pd and Pt.

54. (Withdrawn) A method according to claim 52 wherein said rectangular selected region is parallel with said gate electrodes.

55. (Withdrawn) A method of manufacturing a semiconductor device comprising the steps of:

forming a semiconductor film on an insulating surface of a substrate;

disposing a catalyst containing material in contact with at least one rectangular selected region of the semiconductor film, said catalyst being capable of promoting crystallization of said semiconductor film;

crystallizing said semiconductor film by heating;

patterning said semiconductor film into an active layer of a pair of N-channel and P-channel thin film transistors, said active layer including at least a portion of said selected portion;

forming two gate electrodes adjacent to said active layer with a gate insulating film interposed therebetween;

introducing N-channel and P-channel impurities into said active layer;
and

forming a wiring over said gate electrodes and said active layer, said wiring being in contact with said selected portion of said semiconductor film.

56. (Withdrawn) A method according to claim 55 wherein said catalyst is selected from the group consisting of Ni, Fe, Co, Pd and Pt.

57. (Withdrawn) A method according to claim 55 wherein said rectangular selected region is parallel with said gate electrodes.

58. (Withdrawn) A method of manufacturing a semiconductor device comprising the steps of:

forming a semiconductor film on an insulating surface of a substrate;

disposing a catalyst containing material in contact with at least one rectangular selected region of the semiconductor film, said catalyst being capable of promoting crystallization of said semiconductor film;

crystallizing said semiconductor film by heating;

patterning said semiconductor film into an active layer of at least one thin film transistor, said active layer including at least a portion of said selected portion;

forming a gate insulating film on said active layer;

forming a gate electrode on said gate insulating film; and

forming a wiring over said gate electrode and said active layer, said wiring being in contact with said selected portion of said semiconductor film.

59. (Withdrawn) A method according to claim 58 wherein said catalyst is selected from the group consisting of Ni, Fe, Co, Pd and Pt.

60. (Withdrawn) A method according to claim 58 wherein said rectangular selected region is parallel with said gate electrode.

61. (Withdrawn) A method of manufacturing a semiconductor device comprising the steps of:

- forming a semiconductor film on an insulating surface of a substrate;
- disposing a catalyst containing material in contact with at least one rectangular selected region of the semiconductor film, said catalyst being capable of promoting crystallization of said semiconductor film;
- crystallizing said semiconductor film by heating;
- patterning said semiconductor film into an active layer of thin film transistors, said active layer including at least a portion of said selected portion;
- forming a gate insulating film on said active layer;
- forming at least two gate electrodes on said gate insulating film; and
- forming a wiring over said gate electrodes and said active layer, said wiring being in contact with said selected portion of said semiconductor film.

62. (Withdrawn) A method according to claim 61 wherein said catalyst is selected from the group consisting of Ni, Fe, Co, Pd and Pt.

63. (Withdrawn) A method according to claim 61 wherein said rectangular selected region is parallel with said gate electrodes.

64. (Withdrawn) A method of manufacturing a semiconductor device comprising the steps of:

- forming a semiconductor film on an insulating surface of a substrate;
- disposing a catalyst containing material in contact with at least one rectangular selected region of the semiconductor film, said catalyst being capable of promoting crystallization of said semiconductor film;

crystallizing said semiconductor film by heating;
patterning said semiconductor film into an active layer of a pair of N-channel and P-channel thin film transistors, said active layer including at least a portion of said selected portion;
forming a gate insulating film on said active layer;
forming two gate electrodes on said gate insulating film;
introducing N-channel and P-channel impurities into said active layer;
and

forming a wiring over said gate electrodes and said active layer, said wiring being in contact with said selected portion of said semiconductor film.

65. (Withdrawn) A method according to claim 64 wherein said catalyst is selected from the group consisting of Ni, Fe, Co, Pd and Pt.

66. (Withdrawn) A method according to claim 64 wherein said rectangular selected region is parallel with said gate electrodes.

67-84 (Canceled).

85. (Currently Amended) A method for manufacturing a semiconductor device comprising the steps of:

forming a semiconductor film over a substrate;
disposing a crystallizing promoting material in contact with a selected portion of the semiconductor film;

crystallizing the semiconductor film by heating wherein a crystal grows from said selected portion of the semiconductor film to a second portion of the semiconductor film adjacent to said selected portion;

patterning the ~~crystalline~~ crystallized semiconductor film to form an active layer ~~including the selected portion~~ wherein said active layer includes at least a first

region and a second region where said first region includes at least a part of the selected portion of the semiconductor film and said second region includes at least a part of the second portion of the semiconductor film;

forming a gate insulating film over the active layer;
forming a gate electrode over the gate insulating film;
forming an insulating film over the gate insulating film; and
forming a wiring over the insulating film,
wherein the wiring is ~~connected to the selected portion~~ in contact with said first region of the active layer.

86. (Previously Presented) A method according to claim 85, wherein the crystallization promoting material comprises an element selected from the group consisting of Ni, Fe, Co, Pd and Pt.

87. (Previously Presented) A method according to claim 85, wherein the heating is performed at a temperature of 450 to 500 °C.

88. (Previously Presented) A method according to claim 85, wherein the crystallization promoting material is disposed by a spin-coating.

89. (Previously Presented) A method according to claim 85, wherein the active layer contains the crystallization promoting material at a concentration of 1×10^{15} atoms/cm³ or more.

90. (Previously Presented) A method according to claim 85, wherein the semiconductor device constitute a driver circuit of an active matrix display device.

91. (Currently Amended) A method for manufacturing a semiconductor device comprising the steps of:

forming a semiconductor film over a substrate;

disposing a crystallizing promoting material in contact with a selected portion of the semiconductor film;

crystallizing the semiconductor film by heating wherein a crystal grows from said selected portion of the semiconductor film to a second portion of the semiconductor film adjacent to said selected portion;

~~patterning the crystalline~~ crystallized semiconductor film to form an active layer ~~including the selected portion~~ wherein said active layer includes at least a first region and a second region where said first region includes at least a part of the selected portion of the semiconductor film and said second region includes at least a part of the second portion of the semiconductor film;

forming a gate insulating film over the active layer;

forming two gate electrodes over the gate insulating film;

forming an insulating film over the gate insulating film; and

forming a wiring over the insulating film,

wherein the wiring is ~~connected to the selected portion~~ in contact with said first region of the active layer,

wherein the active layer constitutes a pair of N-channel and P-channel thin film transistors.

92. (Previously Presented) A method according to claim 91, wherein the crystallization promoting material comprises an element selected from the group consisting of Ni, Fe, Co, Pd and Pt.

93. (Previously Presented) A method according to claim 91, wherein the

heating is performed at a temperature of 450 to 500 °C.

94. (Previously Presented) A method according to claim 91, wherein the crystallization promoting material is disposed by a spin-coating.

95. (Previously Presented) A method according to claim 91, wherein the active layer contains the crystallization promoting material at a concentration of 1×10^{15} atoms/cm³ or more.

96. (Previously Presented) A method according to claim 91, wherein the semiconductor device constitute a driver circuit of an active matrix display device.

97. (Currently Amended) A method for manufacturing a semiconductor device comprising the steps of:

forming a semiconductor film over a substrate;

disposing a crystallizing promoting material in contact with a selected portion of the semiconductor film;

crystallizing the semiconductor film by heating wherein a crystal grows from said selected portion of the semiconductor film to a second portion of the semiconductor film adjacent to said selected portion;

~~patterning the crystalline~~ crystallized semiconductor film to form an active layer ~~including the selected portion wherein said active layer includes at least a first region and a second region where said first region includes at least a part of the selected portion of the semiconductor film and said second region includes at least a part of the second portion of the semiconductor film;~~

forming a gate insulating film over the active layer;

forming a gate electrode over the gate insulating film;

forming an insulating film over the gate insulating film; and
forming a wiring over the insulating film,
wherein the wiring is ~~connected to the selected portion of the active layer~~ in contact with said first region of the active layer.

98. (Previously Presented) A method according to claim 97, wherein the crystallization promoting material comprises an element selected from the group consisting of Ni, Fe, Co, Pd and Pt.

99. (Previously Presented) A method according to claim 97, wherein the heating is performed at a temperature of 450 to 500 °C.

100. (Previously Presented) A method according to claim 97, wherein the crystallization promoting material is disposed by a spin-coating.

101. (Previously Presented) A method according to claim 97, wherein the active layer contains the crystallization promoting material at a concentration of 1×10^{15} atoms/cm³ or more.

102. (Previously Presented) A method according to claim 97, wherein the semiconductor device constitute a driver circuit of an active matrix display device.

103. (Currently Amended) A method for manufacturing a semiconductor device comprising the steps of:
forming a semiconductor film over a substrate;
disposing a crystallizing promoting material in contact with a selected portion of the semiconductor film;

crystallizing the semiconductor film by heating wherein a crystal grows from said selected portion of the semiconductor film to a second portion of the semiconductor film adjacent to said selected portion;

patterning the ~~crystalline~~ crystallized semiconductor film to form an active layer including the selected portion wherein said active layer includes at least a first region and a second region where said first region includes at least a part of the selected portion of the semiconductor film and said second region includes at least a part of the second portion of the semiconductor film;

forming a gate insulating film over the active layer;

forming a gate electrode over the gate insulating film;

forming an insulating film over the gate insulating film; and

forming a wiring over the insulating film,

wherein the wiring is ~~connected to the selected portion of the active layer in~~ contact with said first region of the active layer.

wherein the crystals extend along with a direction in which carriers of the thin film transistor flow.

104. (Previously Presented) A method according to claim 103, wherein the crystallization promoting material comprises an element selected from the group consisting of Ni, Fe, Co, Pd and Pt.

105. (Previously Presented) A method according to claim 103, wherein the heating is performed at a temperature of 450 to 500 °C.

106. (Previously Presented) A method according to claim 103, wherein the crystallization promoting material is disposed by a spin-coating.

107. (Previously Presented) A method according to claim 103, wherein the active layer contains the crystallization promoting material at a concentration of 1×10^{15} atoms/cm³ or more.

108. (Previously Presented) A method according to claim 103, wherein the semiconductor device constitute a driver circuit of an active matrix display device.

109. (Currently Amended) A method for manufacturing a semiconductor device comprising the steps of:

forming a semiconductor film over a substrate;

disposing a crystallizing promoting material in contact with a selected portion of the semiconductor film;

crystallizing the semiconductor film by heating wherein a crystal grows from said selected portion of the semiconductor film to a second portion of the semiconductor film adjacent to said selected portion;

patterning the ~~crystalline~~ crystallized semiconductor film to form an active layer ~~including the selected portion~~ wherein said active layer includes at least a first region and a second region where said first region includes at least a part of the selected portion of the semiconductor film and said second region includes at least a part of the second portion of the semiconductor film;

forming a gate insulating film over the active layer;

forming a gate electrode over the gate insulating film;

forming an insulating film over the gate insulating film; and

forming a wiring over the insulating film,

wherein the wiring is ~~connected to the selected portion~~ in contact with said first region of the active layer,

wherein the crystals extend along with a direction connecting source and drain

regions of the thin film transistor.

110. (Previously Presented) A method according to claim 109, wherein the crystallization promoting material comprises an element selected from the group consisting of Ni, Fe, Co, Pd and Pt.

111. (Previously Presented) A method according to claim 109, wherein the heating is performed at a temperature of 450 to 500 °C.

112. (Previously Presented) A method according to claim 109, wherein the crystallization promoting material is disposed by a spin-coating.

113. (Previously Presented) A method according to claim 109, wherein the active layer contains the crystallization promoting material at a concentration of 1×10^{15} atoms/cm³ or more.

114. (Previously Presented) A method according to claim 109, wherein the semiconductor device constitute a driver circuit of an active matrix display device.

115. (Currently Amended) A method for manufacturing a semiconductor device comprising the steps of:

forming a semiconductor film over a substrate;

disposing a crystallizing promoting material in contact with a selected portion of the semiconductor film;

crystallizing the semiconductor film by heating wherein a crystal grows from said selected portion of the semiconductor film to a second portion of the semiconductor film adjacent to said selected portion;

patterning the ~~crystalline~~ crystallized semiconductor film to form an active layer ~~including the selected portion wherein said active layer includes at least a first region and a second region where said first region includes at least a part of the selected portion of the semiconductor film and said second region includes at least a part of the second portion of the semiconductor film;~~

forming a gate insulating film over the active layer;

forming a gate electrode over the gate insulating film;

forming an insulating film over the gate insulating film; and

forming a wiring over the insulating film,

wherein the wiring is ~~connected to the selected portion~~ in contact with said first region of the active layer,

wherein the active layer contains the crystallization promoting material at a concentration of 1×10^{19} atoms/cm³ or less.

116. (Previously Presented) A method according to claim 115, wherein the crystallization promoting material comprises an element selected from the group consisting of Ni, Fe, Co, Pd and Pt.

117. (Previously Presented) A method according to claim 115, wherein the heating is performed at a temperature of 450 to 500 °C.

118. (Previously Presented) A method according to claim 115, wherein the crystallization promoting material is disposed by a spin-coating.

119. (Previously Presented) A method according to claim 115, wherein the active layer contains the crystallization promoting material at a concentration of 1×10^{15} atoms/cm³ or more.

120. (Previously Presented) A method according to claim 115, wherein the semiconductor device constitute a driver circuit of an active matrix display device.